

Application No.: 10/754,410

CLAIM AMENDMENTS

1. (Original) An electronic junction comprising:

a first conductive component, said first conductive component comprising:

a substrate having a contact surface; and

a monolayer of plurality of substantially parallel molecular units having first and second ends, and attached through their first ends to said contact surface through a conjugated bond; and

a second conductive component in electrical contact with said second ends of said substantially parallel molecular units.

2. (Original) An electronic junction according to claim 1 wherein said first conductive component comprises electrically conductive carbon.

3. (Currently amended) An electronic junction according to claim 1, each said substantially parallel molecular unit having a length, wherein said substantially parallel molecular units ~~[[that]]~~ are of substantially the same length.

4. (Original) An electronic junction according to claim 1 wherein second conductive component is chemically bound to said second ends of said substantially parallel molecular units.

Application No. 10/754,410

5. (Currently amended) An electronic junction according to claim 1 wherein at least some of said substantially parallel molecular units comprise a moiety capable of binding at least one chemical species so as to alter the electronic character of said at least some of said molecular units.

6. (Currently amended) An electronic junction according to claim 1 wherein at least some of said substantially parallel molecular units comprise a moiety capable of binding a metal ion so as to alter the electronic character of said at least some of said molecular units.

7. (Currently amended) An electronic junction according to claim 1 wherein at least some of said substantially parallel molecular units are sensitive to incident electromagnetic radiation which may alter the electronic character of said at least some of said molecular units.

8. (Original) An electronic junction according to claim 1 wherein at least one of said first and second conductive components is translucent.

9. (Currently amended) An electronic junction according to claim 1 wherein at least some of said substantially parallel molecular units form a molecular orbital such that ~~the~~ passage of current through at least some of said substantially parallel molecular units emit causes the emission of electromagnetic radiation when a current is passed through ~~from~~ said at least some of said substantially parallel molecular units.

Application No. 10/754,410

10. (Original) An electronic junction according to claim 9 wherein said electromagnetic radiation is visible light.

11. (Original) An electronic junction according to claim 9 wherein said electromagnetic radiation is infrared light.

12. (Original) An electronic junction according to claim 9 wherein said electromagnetic radiation is amplified.

13. (Original) An electronic junction according to claim 9 wherein at least one of said first and second conductive components is translucent.

14. (Currently amended) An electronic junction according to claim 1, said monolayer having a property selected from the group consisting of: reflectivity and transmissibility, wherein ~~at least some of said molecular units are sensitive to the passage of current such that the passage of a current through at least some of said molecular units causes a change in the reflectivity or transmissibility~~ said property of said monolayer.

Application No. 10/754,410

15. (Currently amended) An electronic junction according to claim 1, said monolayer having a property selected from the group consisting of: reflectivity and transmissibility, wherein at least some of said substantially parallel molecular units are sensitive to ~~the incidence of~~ electromagnetic radiation incident ~~such that the incidence of electromagnetic radiation~~ on at least some of said substantially parallel molecular units so as to cause ~~causes~~ a change in ~~the reflectivity or transmissibility~~ said property of said monolayer.

16. (Currently amended) An electronic junction according to claim 1 wherein at least some of said substantially parallel molecular units form an arrangement of molecular orbitals such that said electronic junction is capable of functioning as a semiconductor.

17. (Currently amended) An electronic junction comprising:

a first conductive component, said first conductive component comprising a first contact surface;

a monolayer of a first plurality of substantially parallel first molecular units having first and second ends, each said parallel first molecular unit having a length, wherein each of said parallel first molecular units is of substantially the same length and is attached through its first end to said first contact surface through a conjugated bond;

a second conductive component having first and second sides, said first side in electrical contact with said second ends of said parallel first molecular units, and said second side having a second contact surface;

Application No. 10/754,410

a monolayer of a second plurality of substantially parallel second molecular units having first and second ends, each of said parallel second molecular units attached through their first end to said second contact surface through a conjugated bond; and
a third conductive component having first and second sides, said first side in electrical contact with said second ends of said parallel second molecular units.

18. (Original) An electronic junction according to claim 17 wherein said first side of said second conductive component is covalently bound to said second ends of said parallel first molecular units.

19. (Original) An electronic junction according to claim 17 wherein said first side of said third conductive component is covalently bound to said second ends of said parallel second molecular units.

20. (Cancelled).

21. (Cancelled).

22. (Cancelled).